

T, 1180

(1) GENERAL INFORMATION:

- (i) APPLICANT: KAWAKAMI, YUTAKA; ROSENBERG, STEVEN A.
- (ii) TITLE OF INVENTION: MELANOMA ANTIGENS AND THEIR USE IN DIAGNOSTIC AND THERAPEUTIC METHODS
- (iii) NUMBER OF SEQUENCES: 126
- (iv) CORRESPONDENCE ADDRESS:
(A) ADDRESSEE: MORGAN & FINNEGAN, L.L.P.
(B) STREET: 345 PARK AVENUE
(C) CITY: NEW YORK
(D) STATE: NEW YORK
(E) COUNTRY: USA
(F) ZIP: 10154
- (v) COMPUTER READABLE FORM:
(A) MEDIUM TYPE: FLOPPY DISK
(B) COMPUTER: IBM PC COMPATIBLE
(C) OPERATING SYSTEM: PC-DOS/MS-DOS
(D) SOFTWARE: ASCII
- (vi) CURRENT APPLICATION DATA:
(A) APPLICATION NUMBER: US/08/417,174
(B) FILING DATE: 05-APR-1995
- (vii) PRIOR APPLICATION DATA:
(A) APPLICATION NUMBER: US/08/231,565
(B) FILING DATE: 22-APR-1994
(C) CLASSIFICATION:
- (viii) ATTORNEY/AGENT INFORMATION:
(A) NAME: CAROL M. GRUPPI
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(C) REFERENCE/DOCKET NUMBER: 2026-4124US1
- (ix) TELECOMMUNICATION INFORMATION:
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(2) INFORMATION FOR SEQ ID NO: 1:

- ```
(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 1559
 (B) TYPE: NUCLEOTIDE
 (C) STRANDEDNESS: DOUBLE
 (D) TOPOLOGY: UNKNOWN
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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

119

|                                             |      |
|---------------------------------------------|------|
| CCCAGGCTGG AGTGCAATGG CGCGATCTTG GCTCACCATA | 1040 |
| ACCTCCGCCT CCCAGGTTCA AGCAATTCTC CTGCCTTAGC | 1080 |
| CTCCTGAGTA GCTGGGATTA CAGGCGTGCG CCACTATGCC | 1120 |
| TGACTAATTT TGTAGTTTTA GTAGAGACGG GGTTCCTCCA | 1160 |
| TGTTGGTCAG GCTGGTCTCA AACTCCTGAC CTCAGGTGAT | 1200 |
| CTGCCCCGCT CAGCCTCCCA AAGTGCTGGA ATTACAGGCG | 1240 |
| TGAGCCACCA CGCCTGGCTG GATCCTATAT CTTAGGTAAG | 1280 |
| ACATATAACG CAGTCTAATT ACATTTCACT TCAAGGCTCA | 1320 |
| ATGCTATTCT AACTAATGAC AAGTATTTTC TACTAAACCA | 1360 |
| GAAATTGGTA GAAGGATTTA AATAAGTAAA AGCTACTATG | 1400 |
| TACTGCCTTA GTGCTGATGC CTGTGTACTG CCTTAAATGT | 1440 |
| ACCTATGGCA ATTTAGCTCT CTTGGGTTCC CAAATCCCTC | 1480 |
| TCACAAGAAT GTGCAGAAGA AATCATAAAG GATCAGAGAT | 1520 |
| TCTGAAAAAA AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA | 1559 |

(2) INFORMATION FOR SEQ ID NO: 2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 118
- (B) TYPE: amino acid
- (C) STRANDEDNESS: Unknown
- (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Pro | Arg | Glu | Asp | Ala | His | Phe | Ile | Tyr | Gly | Tyr | Pro | Lys |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     |
| Lys | Gly | His | Gly | His | Ser | Tyr | Thr | Thr | Ala | Glu | Glu | Ala | Ala |
| 15  |     |     |     | 20  |     |     |     |     | 25  |     |     |     |     |
| Gly | Ile | Gly | Ile | Leu | Thr | Val | Ile | Leu | Gly | Val | Leu | Leu | Leu |
| 30  |     |     |     | 35  |     |     |     |     | 40  |     |     |     |     |
| Ile | Gly | Cys | Trp | Tyr | Cys | Arg | Arg | Asn | Gly | Tyr | Arg | Ala |     |
| 45  |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     |
| Leu | Met | Asp | Lys | Ser | Leu | His | Val | Gly | Thr | Gln | Cys | Ala | Leu |
| 60  |     |     |     | 65  |     |     |     |     | 70  |     |     |     |     |
| Thr | Arg | Arg | Cys | Pro | Gln | Glu | Gly | Phe | Asp | His | Arg | Asp | Ser |
| 75  |     |     |     | 80  |     |     |     |     |     |     |     |     |     |

(2) INFORMATION FOR SEQ ID NO: 3:

- Thr Thr Ala Glu Glu Ala Ala Gly Ile  
1 5

```
(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 9
 (B) TYPE: amino acid
 (C) STRANDEDNESS: Unknown
 (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:
```

Ala Ala Gly Ile Gly Ile Leu Thr Val  
1 5

```
(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 9
 (B) TYPE: amino acid
 (C) STRANDEDNESS: Unknown
 (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:
```

Gly Ile Gly Ile Leu Thr Val Ile Leu  
1 5

(2) INFORMATION FOR SEQ ID NO: 6:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:

Gly Ile Leu Thr Val Ile Leu Gly Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 7:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:

Ile Leu Thr Val Ile Leu Gly Val Leu  
1 5

(2) INFORMATION FOR SEQ ID NO: 8:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:

Leu Thr Val Ile Leu Gly Val Leu Leu  
1 5

(2) INFORMATION FOR SEQ ID NO: 9:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:

Thr Val Ile Leu Gly Val Leu Leu Leu  
1 5

(2) INFORMATION FOR SEQ ID NO: 10:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:

Val Ile Leu Gly Val Leu Leu Leu Ile  
1 5

(2) INFORMATION FOR SEQ ID NO: 11:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:

Ala Leu Met Asp Lys Ser Leu His Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 12:

- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9
- (B) TYPE: amino acid
- (C) STRANDEDNESS: Unknown
- (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:

Ser Leu His Val Gly Thr Gln Cys Ala  
1 5

(2) INFORMATION FOR SEQ ID NO: 13:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:

Pro Val Val Pro Asn Ala Pro Pro Ala  
1 5

(2) INFORMATION FOR SEQ ID NO: 14:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:

Asn Ala Pro Pro Ala Tyr Glu Lys Leu  
1 5

(2) INFORMATION FOR SEQ ID NO: 15:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 10
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:

Tyr Thr Thr Ala Glu Glu Ala Ala Gly Ile  
1 5 10

(2) INFORMATION FOR SEQ ID NO: 16:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10
- (B) TYPE: amino acid
- (C) STRANDEDNESS: Unknown
- (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16:

Thr Ala Glu Glu Ala Ala Gly Ile Gly Ile  
1 5 10

(2) INFORMATION FOR SEQ ID NO: 17:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10
- (B) TYPE: amino acid
- (C) STRANDEDNESS: Unknown
- (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17:

Glu Ala Ala Gly Ile Gly Ile Leu Thr Val  
1 5 10

(2) INFORMATION FOR SEQ ID NO: 18:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10
- (B) TYPE: amino acid
- (C) STRANDEDNESS: Unknown
- (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 18:



Ala Ala Gly Ile Gly Ile Leu Thr Val Ile  
1 5 10

(2) INFORMATION FOR SEQ ID NO: 19:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10  
(B) TYPE: amino acid  
(C) STRANDEDNESS: Unknown  
(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 19:

Gly Ile Leu Thr Val Ile Leu Gly Val Leu  
1 5 10

(2) INFORMATION FOR SEQ ID NO: 20:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10  
(B) TYPE: amino acid  
(C) STRANDEDNESS: Unknown  
(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 20:

Ile Leu Thr Val Ile Leu Gly Val Leu Leu  
1 5 10

(2) INFORMATION FOR SEQ ID NO: 21:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10  
(B) TYPE: amino acid  
(C) STRANDEDNESS: Unknown  
(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 21:

Leu Thr Val Ile Leu Gly Val Leu Leu Leu  
1 5 10

(2) INFORMATION FOR SEQ ID NO: 22:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10  
(B) TYPE: amino acid  
(C) STRANDEDNESS: Unknown  
(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 22:

Thr Val Ile Leu Gly Val Leu Leu Ile  
1 5 10

(2) INFORMATION FOR SEQ ID NO: 23:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10  
(B) TYPE: amino acid  
(C) STRANDEDNESS: Unknown  
(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 23:

Arg Ala Leu Met Asp Lys Ser Leu His Val  
1 5 10

(2) INFORMATION FOR SEQ ID NO: 24:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10  
(B) TYPE: amino acid  
(C) STRANDEDNESS: Unknown  
(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 24:

Ser Leu His Val Gly Thr Gln Cys Ala Leu  
1 5 10

(2) INFORMATION FOR SEQ ID NO: 25:

- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10
- (B) TYPE: amino acid
- (C) STRANDEDNESS: Unknown
- (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 25:

Ser Leu Gln Glu Lys Asn Cys Glu Pro Val  
1 5 10

(2) INFORMATION FOR SEQ ID NO: 26:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 2172
- (B) TYPE: nucleotide
- (C) STRANDEDNESS: Double
- (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 26:

|                                             |     |
|---------------------------------------------|-----|
| GTCGACGGCC ATTACCAATC GCGACCGGGA AGAACACAAT | 40  |
| GGATCTGGTG CTAAAAAGAT GCCTTCTTCA TTTGGCTGTG | 80  |
| ATAGGTGCTT TGCTGGCTGT GGGGGCTACA AAAGTACCCA | 120 |
| GAAACCAGGA CTGGCTTGGT GTCTCAAGGC AACTCAGAAC | 160 |
| CAAAGCCTGG AACAGGCAGC TGTATCCAGA GTGGACAGAA | 200 |
| GCCCAGAGAC TTGACTGCTG GAGAGGTGGT CAAGTGTCCC | 240 |
| TCAAGGTCAG TAATGATGGG CCTACACTGA TTGGTGCAAA | 280 |
| TGCCTCCTTC TCTATTGCCT TGAAGTTCCC TGGAAGCCAA | 320 |
| AAGGTATTGC CAGATGGGCA GGTATCTGG GTCAACAATA  | 360 |
| CCATCATCAA TGGGAGCCAG GTGTGGGGAG GACAGCCAGT | 400 |
| GTATCCCCAG GAAACTGACG ATGCCTGCAT CTTCCCTGAT | 440 |
| GGTGGACCTT GCCCATCTGG CTCTTGGTCT CAGAAGAGAA | 480 |
| GCTTTGTTTA TGTCTGGAAG ACCTGGGGCC AATACTGGCA | 520 |
| ATTTCTAGGG GGCCCAGTGT CTGGGCTGAG CATTGGGACA | 560 |

|                                              |      |
|----------------------------------------------|------|
| GGCAGGGCAA TGCTGGGCAC ACACACCATG GAAGTGACTG  | 600  |
| TCTACCATCG CCGGGGATCC CGGAGCTATG TGCCTCTTGC  | 640  |
| TCATTCCAGC TCAGCCTTCA CCATTACTGA CCAGGTGCCT  | 680  |
| TTCTCCGTGA GCGTGTCCCA GTTGCGGGCC TTGGATGGAG  | 720  |
| GGAACAAGCA CTTCTGAGA AATCAGCCTC TGACCTTTGC   | 760  |
| CCTCCAGCTC CATGACCCCA GTGGCTATCT GGCTGAAGCT  | 800  |
| GACCTCTCCT ACACCTGGGA CTTTGGAGAC AGTAGTGGAA  | 840  |
| CCCTGATCTC TCGGGCACTT GTGGTCACTC ATACTTACCT  | 880  |
| GGAGCCTGGC CCAGTCACTG CCCAGGTGGT CCTGCAGGCT  | 920  |
| GCCATTCTC TCACCTCCTG TGGCTCCTCC CCAGTTCCAG   | 960  |
| GCACCACAGA TGGGCACAGG CCAACTGCAG AGGCCCTAA   | 1000 |
| CACCACAGCT GGCCAAGTGC CTACTACAGA AGTTGTGGGT  | 1040 |
| ACTACACCTG GTCAGGCGCC AACTGCAGAG CCCTCTGGAA  | 1080 |
| CCACATCTGT GCAGGTGCCA ACCACTGAAG TCATAAGCAC  | 1120 |
| TGCACCTGTG CAGATGCCAA CTGCAGAGAG CACAGGTATG  | 1160 |
| ACACCTGAGA AGGTGCCAGT TTCAGAGGTC ATGGGTACCA  | 1200 |
| CACTGGCAGA GATGTCAACT CCAGAGGCTA CAGGTATGAC  | 1240 |
| ACCTGCAGAG GTATCAATTG TGGTGCTTTC TGGAACCACA  | 1280 |
| GCTGCACAGG TAACAACCTAC AGAGTGGGTG GAGACCACAG | 1320 |
| CTAGAGAGCT ACCTATCCCT GAGCCTGAAG GTCCAGATGC  | 1360 |
| CAGCTCAATC ATGTCTACGG AAAGTATTAC AGGTTCCCTG  | 1400 |
| GGCCCCCTGC TGGATGGTAC AGCCACCTTA AGGCTGGTGA  | 1440 |
| AGAGACAAGT CCCCCTGGAT TGTGTTCTGT ATCGATATGG  | 1480 |
| TTCCTTTTCC GTCACCCTGG ACATTGTCCA GGGTATTGAA  | 1520 |
| AGTGCCGAGA TCCTGCAGGC TGTGCCGTCC GGTGAGGGGG  | 1560 |
| ATGCATTTGA GCTGACTGTG TCCTGCCAAG GCGGGCTGCC  | 1600 |
| CAAGGAAGCC TGCATGGAGA TCTCATCGCC AGGGTGCCAG  | 1640 |

|                                             |      |
|---------------------------------------------|------|
| CCCCCTGCCC AGCGGCTGTG CCAGCCTGTG CTACCCAGCC | 1680 |
| CAGCCTGCCA GCTGGTTCTG CACCAGATAC TGAAGGGTGG | 1720 |
| CTCGGGGACA TACTGCCTCA ATGTGTCTCT GGCTGATACC | 1760 |
| AACAGCCTGG CAGTGGTCAG CACCCAGCTT ATCATGCCTG | 1800 |
| GTCAAGAAGC AGGCCTTGGG CAGGTTCCGC TGATCGTGGG | 1840 |
| CATCTTGCTG GTGTTGATGG CTGTGGTCCT TGCATCTCTG | 1880 |
| ATATATAGGC GCAGACTTAT GAAGCAAGAC TTCTCCGTAC | 1920 |
| CCCAGTTGCC ACATAGCAGC AGTCACTGGC TGCCTCTACC | 1960 |
| CCGCATCTTC TGCTCTTGTC CCATTGGTGA GAACAGCCCC | 2000 |
| CTCCTCAGTG GGCAGCAGGT CTGAGTACTC TCATATGATG | 2040 |
| CTGTGATTTT CCTGGAGTTG ACAGAAACAC CTATATTTCC | 2080 |
| CCCAGTCTTC CCTGGGAGAC TACTATTAAC TGAAATAAAT | 2120 |
| ACTCAGAGCC TGAAAAAAAA TAAAAAAAAA AAAAAAAAAA | 2160 |
| AAAAAAAAAA AA                               | 2172 |

(2) INFORMATION FOR SEQ ID NO: 27:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 661
- (B) TYPE: amino acid
- (C) STRANDEDNESS: Unknown
- (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 27:

|     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asp | Leu | Val | Leu | Lys | Arg | Cys | Leu | Leu | His | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |
| Ala | Val | Ile | Gly | Ala | Leu | Leu | Ala | Val | Gly | Ala | Thr |
|     |     | 15  |     |     |     |     | 20  |     |     |     |     |
| Lys | Val | Pro | Arg | Asn | Gln | Asp | Trp | Leu | Gly | Val | Ser |
| 25  |     |     |     | 30  |     |     |     |     | 35  |     |     |
| Arg | Gln | Leu | Arg | Thr | Lys | Ala | Trp | Asn | Arg | Gln | Leu |
|     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Tyr | Pro | Glu | Trp | Thr | Glu | Ala | Gln | Arg | Leu | Asp | Cys |
|     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |
| Trp | Arg | Gly | Gly | Gln | Val | Ser | Leu | Lys | Val | Ser | Asn |
|     |     |     | 65  |     |     |     |     | 70  |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Asp | Gly | Pro | Thr | Leu | Ile | Gly | Ala | Asn | Ala | Ser | Phe |  |
|     |     | 75  |     |     |     |     | 80  |     |     |     |     |  |
| Ser | Ile | Ala | Leu | Asn | Phe | Pro | Gly | Ser | Gln | Lys | Val |  |
| 85  |     |     |     | 90  |     |     |     |     |     | 95  |     |  |
| Leu | Pro | Asp | Gly | Gln | Val | Ile | Trp | Val | Asn | Asn | Thr |  |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |  |
| Ile | Ile | Asn | Gly | Ser | Gln | Val | Trp | Gly | Gly | Gln | Pro |  |
| 110 |     |     |     |     |     | 115 |     |     |     |     | 120 |  |
| Val | Tyr | Pro | Gln | Glu | Thr | Asp | Asp | Ala | Cys | Ile | Phe |  |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |  |
| Pro | Asp | Gly | Gly | Pro | Cys | Pro | Ser | Gly | Ser | Trp | Ser |  |
|     |     | 135 |     |     |     |     | 140 |     |     |     |     |  |
| Gln | Lys | Arg | Ser | Phe | Val | Tyr | Val | Trp | Lys | Thr | Trp |  |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |  |
| Gly | Gln | Tyr | Trp | Gln | Phe | Leu | Gly | Gly | Pro | Val | Ser |  |
|     |     |     | 160 |     |     |     |     | 165 |     |     |     |  |
| Gly | Leu | Ser | Ile | Gly | Thr | Gly | Arg | Ala | Met | Leu | Gly |  |
| 170 |     |     |     |     |     | 175 |     |     |     |     | 180 |  |
| Thr | His | Thr | Met | Glu | Val | Thr | Val | Tyr | His | Arg | Arg |  |
|     |     |     |     | 185 |     |     |     |     | 190 |     |     |  |
| Gly | Ser | Arg | Ser | Tyr | Val | Pro | Leu | Ala | His | Ser | Ser |  |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     |  |
| Ser | Ala | Phe | Thr | Ile | Thr | Asp | Gln | Val | Pro | Phe | Ser |  |
| 205 |     |     |     |     | 210 |     |     |     |     | 215 |     |  |
| Val | Ser | Val | Ser | Gln | Leu | Arg | Ala | Leu | Asp | Gly | Gly |  |
|     |     |     | 220 |     |     |     |     | 225 |     |     |     |  |
| Asn | Lys | His | Phe | Leu | Arg | Asn | Gln | Pro | Leu | Thr | Phe |  |
| 230 |     |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Ala | Leu | Gln | Leu | His | Asp | Pro | Ser | Gly | Tyr | Leu | Ala |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |  |
| Glu | Ala | Asp | Leu | Ser | Tyr | Thr | Trp | Asp | Phe | Gly | Asp |  |
|     |     | 255 |     |     |     |     | 260 |     |     |     |     |  |
| Ser | Ser | Gly | Thr | Leu | Ile | Ser | Arg | Ala | Leu | Val | Val |  |
| 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |  |
| Thr | His | Thr | Tyr | Leu | Glu | Pro | Gly | Pro | Val | Thr | Ala |  |
|     |     |     | 275 |     |     |     |     | 280 |     |     |     |  |
| Gln | Val | Val | Leu | Gln | Ala | Ala | Ile | Pro | Leu | Thr | Ser |  |
| 285 |     |     |     |     | 290 |     |     |     |     |     | 295 |  |
| Cys | Gly | Ser | Ser | Pro | Val | Pro | Gly | Thr | Thr | Asp | Gly |  |
|     |     |     |     | 300 |     |     |     |     | 305 |     |     |  |
| His | Arg | Pro | Thr | Ala | Glu | Ala | Pro | Asn | Thr | Thr | Ala |  |
|     |     | 310 |     |     |     |     | 315 |     |     |     |     |  |
| Gly | Gln | Val | Pro | Thr | Thr | Glu | Val | Val | Gly | Thr | Thr |  |
| 320 |     |     |     |     | 325 |     |     |     |     | 330 |     |  |
| Pro | Gly | Gln | Ala | Pro | Thr | Ala | Glu | Pro | Ser | Gly | Thr |  |
|     |     |     | 335 |     |     |     |     | 340 |     |     |     |  |
| Thr | Ser | Val | Gln | Val | Pro | Thr | Thr | Glu | Val | Ile | Ser |  |
| 345 |     |     |     |     |     | 350 |     |     |     |     | 355 |  |
| Thr | Ala | Pro | Val | Gln | Met | Pro | Thr | Ala | Glu | Ser | Thr |  |
|     |     |     |     | 360 |     |     |     |     | 365 |     |     |  |
| Gly | Met | Thr | Pro | Glu | Lys | Val | Pro | Val | Ser | Glu | Val |  |
|     |     | 370 |     |     |     |     | 375 |     |     |     |     |  |
| Met | Gly | Thr | Thr | Leu | Ala | Glu | Met | Ser | Thr | Pro | Glu |  |
| 380 |     |     |     |     | 385 |     |     |     |     | 390 |     |  |

|     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Thr | Gly | Met | Thr | Pro | Ala | Glu | Val | Ser | Ile | Val |
|     |     |     | 395 |     |     |     |     | 400 |     |     |     |
| Val | Leu | Ser | Gly | Thr | Thr | Ala | Ala | Gln | Val | Thr | Thr |
|     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |
| Thr | Glu | Trp | Val | Glu | Thr | Thr | Ala | Arg | Glu | Leu | Pro |
|     |     |     |     | 420 |     |     |     |     | 425 |     |     |
| Ile | Pro | Glu | Pro | Glu | Gly | Pro | Asp | Ala | Ser | Ser | Ile |
|     |     | 430 |     |     |     |     | 435 |     |     |     |     |
| Met | Ser | Thr | Glu | Ser | Ile | Thr | Gly | Ser | Leu | Gly | Pro |
| 440 |     |     |     |     | 445 |     |     |     |     | 450 |     |
| Leu | Leu | Asp | Gly | Thr | Ala | Thr | Leu | Arg | Leu | Val | Lys |
|     |     |     | 455 |     |     |     |     | 460 |     |     |     |
| Arg | Gln | Val | Pro | Leu | Asp | Cys | Val | Leu | Tyr | Arg | Tyr |
|     | 465 |     |     |     |     | 470 |     |     |     |     | 475 |
| Gly | Ser | Phe | Ser | Val | Thr | Leu | Asp | Ile | Val | Gln | Gly |
|     |     |     |     | 480 |     |     |     |     | 490 |     |     |
| Ile | Glu | Ser | Ala | Glu | Ile | Leu | Gln | Ala | Val | Pro | Ser |
|     |     | 495 |     |     |     |     | 500 |     |     |     |     |
| Gly | Glu | Gly | Asp | Ala | Phe | Glu | Leu | Thr | Val | Ser | Cys |
| 505 |     |     |     | 510 |     |     |     |     |     | 515 |     |
| Gln | Gly | Gly | Leu | Pro | Lys | Glu | Ala | Cys | Met | Glu | Ile |
|     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Ser | Ser | Pro | Gly | Cys | Gln | Pro | Pro | Ala | Gln | Arg | Leu |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |
| Cys | Gln | Pro | Val | Leu | Pro | Ser | Pro | Ala | Cys | Gln | Leu |
|     |     |     |     | 545 |     |     |     |     | 550 |     |     |
| Val | Leu | His | Gln | Ile | Leu | Lys | Gly | Gly | Ser | Gly | Thr |
|     |     | 555 |     |     |     |     | 560 |     |     |     |     |
| Tyr | Cys | Leu | Asn | Val | Ser | Leu | Ala | Asp | Thr | Asn | Ser |
| 565 |     |     |     | 570 |     |     |     |     |     | 575 |     |
| Leu | Ala | Val | Val | Ser | Thr | Gln | Leu | Ile | Met | Pro | Gly |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |
| Gln | Glu | Ala | Gly | Leu | Gly | Gln | Val | Pro | Leu | Ile | Val |
|     | 590 |     |     |     |     | 595 |     |     |     |     | 600 |
| Gly | Ile | Leu | Leu | Val | Leu | Met | Ala | Val | Val | Leu | Ala |
|     |     |     |     | 605 |     |     |     |     | 610 |     |     |
| Ser | Leu | Ile | Tyr | Arg | Arg | Arg | Leu | Met | Lys | Gln | Asp |
|     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Phe | Ser | Val | Pro | Gln | Leu | Pro | His | Ser | Ser | Ser | His |
| 625 |     |     |     | 630 |     |     |     |     |     | 635 |     |
| Trp | Leu | Arg | Leu | Pro | Arg | Ile | Phe | Cys | Ser | Cys | Pro |
|     |     |     | 640 |     |     |     |     | 645 |     |     |     |
| Ile | Gly | Glu | Asn | Ser | Pro | Leu | Leu | Ser | Gly | Gln | Gln |
|     | 650 |     |     |     |     | 655 |     |     |     |     | 660 |
| Val |     |     |     |     |     |     |     |     |     |     |     |

(2) INFORMATION FOR SEQ ID NO: 28:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 7
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 28:

Val Pro Gly Ile Leu Leu Thr  
1 5

(2) INFORMATION FOR SEQ ID NO: 29:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7
- (B) TYPE: amino acid
- (C) STRANDEDNESS: Unknown
- (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 29:

Leu Leu Ser Gly Gln Gln Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 30:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 12
- (B) TYPE: amino acid
- (C) STRANDEDNESS: Unknown
- (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 30:

Pro Pro Gln Trp Ala Ala Gly Leu Ser Thr Leu Ile  
1 5 10

(2) INFORMATION FOR SEQ ID NO: 31:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9
- (B) TYPE: amino acid
- (C) STRANDEDNESS: Unknown
- (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 31:



Met Leu Leu Ala Val Leu Tyr Cys Leu  
1 5

(2) INFORMATION FOR SEQ ID NO: 32:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 32:

Tyr Met Asn Gly Thr Met Ser Gln Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 33:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 10
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 33:

Leu Leu Asp Gly Thr Ala Thr Leu Arg Leu  
1 5 10

(2) INFORMATION FOR SEQ ID NO: 34:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 10
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 34:

Val Leu Tyr Arg Tyr Gly Ser Phe Ser Val  
1 5 10

(2) INFORMATION FOR SEQ ID NO: 35:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 10
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 35:

Ala Leu Asp Gly Gly Asn Lys His Phe Leu  
1 5 10

(2) INFORMATION FOR SEQ ID NO: 36:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 36:

Val Leu Lys Arg Cys Leu Leu His Leu  
1 5 10

(2) INFORMATION FOR SEQ ID NO: 37:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 10
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 37:

Val Leu Pro Ser Pro Ala Cys Gln Leu Val  
1 5 10

(2) INFORMATION FOR SEQ ID NO: 38:

- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10
- (B) TYPE: amino acid
- (C) STRANDEDNESS: Unknown
- (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 38:

Ser Leu Ala Asp Thr Asn Ser Leu Ala Val  
1 5 10

(2) INFORMATION FOR SEQ ID NO: 39:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 39:

Ser Val Ser Val Ser Gln Leu Arg Ala  
1 5

(2) INFORMATION FOR SEQ ID NO: 40:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 40:

Tyr Leu Glu Pro Gly Pro Val Thr Ala  
1 5

(2) INFORMATION FOR SEQ ID NO: 41:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown

- (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 41:

Leu Asn Val Ser Leu Ala Asp Thr Asn  
1 5

(2) INFORMATION FOR SEQ ID NO: 42:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 58
  - (B) TYPE: NUCLEOTIDE
  - (C) STRANDEDNESS: DOUBLE
  - (D) TOPOLOGY: UNKNOWN
- (ii) MOLECULE TYPE: cDNA
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 42:

GGACAGGCCG AGGCGGCCTT TTTTTTTTTT TTTTTTTTTT 40  
TTTTTTTTTT TTTTTTTT 58

(2) INFORMATION FOR SEQ ID NO: 43:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 12
  - (B) TYPE: NUCLEOTIDE
  - (C) STRANDEDNESS: DOUBLE
  - (D) TOPOLOGY: UNKNOWN
- (ii) MOLECULE TYPE: cDNA
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 43:

CCAATCGCGA CC 12

(2) INFORMATION FOR SEQ ID NO: 44:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 15
  - (B) TYPE: NUCLEOTIDE
  - (C) STRANDEDNESS: DOUBLE
  - (D) TOPOLOGY: UNKNOWN
- (ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 44:

GGTCGCGATT GGTA

15

(2) INFORMATION FOR SEQ ID NO: 45:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9
- (B) TYPE: amino acid
- (C) STRANDEDNESS: Unknown
- (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 45:

Gly Ile Leu Gly Phe Val Phe Thr Leu  
1 5

(2) INFORMATION FOR SEQ ID NO: 46:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9
- (B) TYPE: amino acid
- (C) STRANDEDNESS: Unknown
- (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 46:

Lys Thr Trp Gly Gln Tyr Trp Gln Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 47:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10
- (B) TYPE: amino acid
- (C) STRANDEDNESS: Unknown
- (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 47:

Lys Thr Trp Gly Gln Tyr Trp Gln Val Leu  
1 5 10

(2) INFORMATION FOR SEQ ID NO: 48:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 48:

Ile Thr Asp Gln Val Pro Phe Ser Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 49:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 10
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 49:

Thr Ile Thr Asp Gln Val Pro Phe Ser Val  
1 5 10

(2) INFORMATION FOR SEQ ID NO: 50:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 50:

Ala Leu Gly Ile Gly Ile Leu Thr Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 51:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 51:

Ala Met Gly Ile Gly Ile Leu Thr Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 52:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 52:

Ala Ile Gly Ile Gly Ile Leu Thr Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 53:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 53:

Trp Ala Gly Ile Gly Ile Leu Thr Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 54:

- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9
- (B) TYPE: amino acid
- (C) STRANDEDNESS: Unknown
- (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 54:

Phe Ala Gly Ile Gly Ile Leu Thr Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 55:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 55:

Tyr Ala Gly Ile Gly Ile Leu Thr Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 56:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 56:

Ala Ala Trp Ile Gly Ile Leu Thr Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 57:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown



(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 57:

Ala Ala Phe Ile Gly Ile Leu Thr Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 58:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 9

(B) TYPE: amino acid

(C) STRANDEDNESS: Unknown

(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 58:

Ala Ala Tyr Ile Gly Ile Leu Thr Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 59:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 9

(B) TYPE: amino acid

(C) STRANDEDNESS: Unknown

(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 59:

Lys Leu Gly Ile Gly Ile Leu Thr Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 60:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 9

(B) TYPE: amino acid

(C) STRANDEDNESS: Unknown

(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 60:

Lys Met Gly Ile Gly Ile Leu Thr Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 61:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9
- (B) TYPE: amino acid
- (C) STRANDEDNESS: Unknown
- (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 61:

Lys Ile Gly Ile Gly Ile Leu Thr Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 62:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9
- (B) TYPE: amino acid
- (C) STRANDEDNESS: Unknown
- (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 62:

Trp Leu Gly Ile Gly Ile Leu Thr Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 63:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9
- (B) TYPE: amino acid
- (C) STRANDEDNESS: Unknown
- (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 63:

Phe Leu Gly Ile Gly Ile Leu Thr Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 64:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 64:

Tyr Leu Gly Ile Gly Ile Leu Thr Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 65:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 65:

Ala Leu Trp Ile Gly Ile Leu Thr Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 66:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 66:

Ala Leu Phe Ile Gly Ile Leu Thr Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 67:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 67:

Ala Leu Tyr Ile Gly Ile Leu Thr Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 68:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 68:

Lys Leu Trp Gly Gln Tyr Trp Gln Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 69:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 69:

Lys Met Trp Gly Gln Tyr Trp Gln Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 70:

- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9
- (B) TYPE: amino acid
- (C) STRANDEDNESS: Unknown
- (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 70:

Lys Ile Trp Gly Gln Tyr Trp Gln Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 71:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 71:

Trp Thr Trp Gly Gln Tyr Trp Gln Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 72:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 72:

Phe Thr Trp Gly Gln Tyr Trp Gln Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 73:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown

(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 73:

Tyr Thr Trp Gly Gln Tyr Trp Gln Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 74:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 9

(B) TYPE: amino acid

(C) STRANDEDNESS: Unknown

(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 74:

Ala Thr Trp Gly Gln Tyr Trp Gln Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 75:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 9

(B) TYPE: amino acid

(C) STRANDEDNESS: Unknown

(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 75:

Leu Thr Trp Gly Gln Tyr Trp Gln Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 76:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 9

(B) TYPE: amino acid

(C) STRANDEDNESS: Unknown

(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

Lys Thr Tyr Gly Gln Tyr Trp Gln Val  
1 5

```
(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 9
 (B) TYPE: amino acid
 (C) STRANDEDNESS: Unknown
 (D) TOPOLOGY: Unknown
```

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 77:

Lys Thr Phe Gly Gln Tyr Trp Gln Val  
1 5

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9
- (B) TYPE: amino acid
- (C) STRANDEDNESS: Unknown
- (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 78:

Ala Leu Trp Gly Gln Tyr Trp Gln Val  
1 5

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9
- (B) TYPE: amino acid
- (C) STRANDEDNESS: Unknown
- (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 79:

Leu Leu Trp Gly Gln Tyr Trp Gln Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 80:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9  
(B) TYPE: amino acid  
(C) STRANDEDNESS: Unknown  
(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 80:

Trp Leu Trp Gly Gln Tyr Trp Gln Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 81:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9  
(B) TYPE: amino acid  
(C) STRANDEDNESS: Unknown  
(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 81:

Phe Leu Trp Gly Gln Tyr Trp Gln Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 82:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9  
(B) TYPE: amino acid  
(C) STRANDEDNESS: Unknown  
(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 82:

Tyr Leu Trp Gly Gln Tyr Trp Gln Val  
1 5



(2) INFORMATION FOR SEQ ID NO: 83:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 83:

Ile Leu Asp Gln Val Pro Phe Ser Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 84:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 84:

Ile Met Asp Gln Val Pro Phe Ser Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 85:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 85:

Ile Ile Asp Gln Val Pro Phe Ser Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 86:

- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9
- (B) TYPE: amino acid
- (C) STRANDEDNESS: Unknown
- (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 86:

Phe Thr Asp Gln Val Pro Phe Ser Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 87:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 87:

Trp Thr Asp Gln Val Pro Phe Ser Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 88:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 88:

Tyr Thr Asp Gln Val Pro Phe Ser Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 89:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 89:

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 90:

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 91:

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 92:

Ile Thr Ala Gln Val Pro Phe Ser Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 93:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9  
(B) TYPE: amino acid  
(C) STRANDEDNESS: Unknown  
(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 93:

Ile Thr Met Gln Val Pro Phe Ser Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 94:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9  
(B) TYPE: amino acid  
(C) STRANDEDNESS: Unknown  
(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 94:

Ile Thr Ser Gln Val Pro Phe Ser Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 95:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9  
(B) TYPE: amino acid  
(C) STRANDEDNESS: Unknown  
(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 95:

Ile Leu Trp Gln Val Pro Phe Ser Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 96:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9  
(B) TYPE: amino acid  
(C) STRANDEDNESS: Unknown  
(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 96:

Ile Leu Phe Gln Val Pro Phe Ser Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 97:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9  
(B) TYPE: amino acid  
(C) STRANDEDNESS: Unknown  
(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 97:

Ile Leu Tyr Gln Val Pro Phe Ser Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 98:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9  
(B) TYPE: amino acid  
(C) STRANDEDNESS: Unknown  
(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 98:

Ile Leu Ala Gln Val Pro Phe Ser Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 99:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 99:

Ile Leu Met Gln Val Pro Phe Ser Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 100:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 100:

Ile Leu Ser Gln Val Pro Phe Ser Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 101:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 101:

Trp Leu Asp Gln Val Pro Phe Ser Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 102:

- (i) SEQUENCE CHARACTERISTICS:



(ii) MOLECULE TYPE: Peptide

Tyr Leu Glu Pro Gly Pro Val Thr Leu  
1 5

(i) SEQUENCE CHARACTERISTICS:

(ii) MOLECULE TYPE: Peptide

Tyr Leu Glu Pro Gly Pro Val Thr Ile  
1 5

(i) SEQUENCE CHARACTERISTICS:

(ii) MOLECULE TYPE: Peptide

Phe Leu Glu Pro Gly Pro Val Thr Ala  
1 5

(i) SEQUENCE CHARACTERISTICS:

(ii) MOLECULE TYPE: Peptide



(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 108:

Trp Leu Glu Pro Gly Pro Val Thr Ala  
1 5

(2) INFORMATION FOR SEQ ID NO: 109:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9  
(B) TYPE: amino acid  
(C) STRANDEDNESS: Unknown  
(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 109:

Tyr Leu Tyr Pro Gly Pro Val Thr Ala  
1 5

(2) INFORMATION FOR SEQ ID NO: 110:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9  
(B) TYPE: amino acid  
(C) STRANDEDNESS: Unknown  
(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 110:

Tyr Leu Trp Pro Gly Pro Val Thr Ala  
1 5

(2) INFORMATION FOR SEQ ID NO: 111:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9  
(B) TYPE: amino acid  
(C) STRANDEDNESS: Unknown  
(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 111:

Tyr Leu Phe Pro Gly Pro Val Thr Ala  
1 5

(2) INFORMATION FOR SEQ ID NO: 112:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9  
(B) TYPE: amino acid  
(C) STRANDEDNESS: Unknown  
(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 112:

Tyr Leu Met Pro Gly Pro Val Thr Ala  
1 5

(2) INFORMATION FOR SEQ ID NO: 113:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9  
(B) TYPE: amino acid  
(C) STRANDEDNESS: Unknown  
(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 113:

Tyr Leu Ser Pro Gly Pro Val Thr Ala  
1 5

(2) INFORMATION FOR SEQ ID NO: 114:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9  
(B) TYPE: amino acid  
(C) STRANDEDNESS: Unknown  
(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 114:

Tyr Leu Ala Pro Gly Pro Val Thr Ala  
1 5

160

- (A) LENGTH: 9
- (B) TYPE: amino acid
- (C) STRANDEDNESS: Unknown
- (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 118:

Tyr Leu Tyr Pro Gly Pro Val Thr Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 119:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 119:

Tyr Leu Phe Pro Gly Pro Val Thr Val  
1 5

(2) INFORMATION FOR SEQ ID NO: 120:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 120:

(2) INFORMATION FOR SEQ ID NO: 121:

(ii) MOLECULE TYPE: Protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 121:

EJ083359791US



|     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Gln | Pro | Val | Leu | Pro | Ser | Pro | Ala | Cys | Gln | Leu |
|     |     |     |     | 545 |     |     |     |     | 550 |     |     |
| Val | Leu | His | Gln | Ile | Leu | Lys | Gly | Gly | Ser | Gly | Thr |
|     |     | 555 |     |     |     |     | 560 |     |     |     |     |
| Tyr | Cys | Leu | Asn | Val | Ser | Leu | Ala | Asp | Thr | Asn | Ser |
| 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Leu | Ala | Val | Val | Ser | Thr | Gln | Leu | Ile | Met | Pro | Gly |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |
| Gln | Glu | Ala | Gly | Leu | Gly | Gln | Val | Pro | Leu | Ile | Val |
|     | 590 |     |     |     |     | 595 |     |     |     |     | 600 |
| Gly | Ile | Leu | Leu | Val | Leu | Met | Ala | Val | Val | Leu | Ala |
|     |     |     | 605 |     |     |     |     | 610 |     |     |     |
| Ser | Leu | Ile | Tyr | Arg | Arg | Arg | Leu | Met | Lys | Gln | Asp |
|     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Phe | Ser | Val | Pro | Gln | Leu | Pro | His | Ser | Ser | Ser | His |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |
| Trp | Leu | Arg | Leu | Pro | Arg | Ile | Phe | Cys | Ser | Cys | Pro |
|     |     |     | 640 |     |     |     |     | 645 |     |     |     |
| Ile | Gly | Glu | Asn | Ser | Pro | Leu | Leu | Ser | Gly | Gln | Gln |
|     | 650 |     |     |     |     | 655 |     |     |     |     | 660 |
| Val |     |     |     |     |     |     |     |     |     |     |     |

(2) INFORMATION FOR SEQ ID NO: 122:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 122:

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Xaa | Xaa | Ile | Gly | Ile | Leu | Thr | Xaa |
| 1   |     |     |     | 5   |     |     |     |     |

(2) INFORMATION FOR SEQ ID NO: 123:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 9
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: Unknown
  - (D) TOPOLOGY: Unknown
- (ii) MOLECULE TYPE: Peptide
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 123:

Xaa Xaa Xaa Gly Gln Tyr Trp Gln Xaa  
1 5

(2) INFORMATION FOR SEQ ID NO: 124:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9  
(B) TYPE: amino acid  
(C) STRANDEDNESS: Unknown  
(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 124:

Xaa Xaa Xaa Gln Val Pro Phe Ser Xaa  
1 5

(2) INFORMATION FOR SEQ ID NO: 125:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 9  
(B) TYPE: amino acid  
(C) STRANDEDNESS: Unknown  
(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 125:

Xaa Xaa Xaa Pro Gly Pro Val Thr Xaa  
1 5

(2) INFORMATION FOR SEQ ID NO: 126:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10  
(B) TYPE: amino acid  
(C) STRANDEDNESS: Unknown  
(D) TOPOLOGY: Unknown

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 126:

Phe Leu Pro Ser Asp Tyr Phe Pro Ser Val  
1 5 10